ASL Code of Conduct Rechargeable Batteries

Purpose

The goal of this code of conduct is the achievement of a high standard of safety and safety awareness in ASL in terms of rechargeable batteries. We want to achieve this goal through targeted information and awareness, not through prohibition and control.

To whom this document is directed

- Employees
- Students
- Academic guests
- Temporary employees

What is it about?

Due to our daily work with autonomous platforms, a considerable number of rechargeable batteries is in daily operation in the lab. Some of these batteries may be potentially dangerous when not properly handled.

Potentially dangerous battery types are:

Battery type	Danger sources (Risk)	Possible Impact
Lithium Ion	- Mechanical stress (medium) - Mechanical deformation(medium) - Mechanical damage(high) - Short circuit (high) - Overcharging (high) - Incorrect storage (low)	- Overheating - Meltdown of housing - Other structural parts may catch fire - Unwanted chemical reactions - Fire - Explosion - Emission of toxic gases - Strong smoke development
Lithium Polymer	- Mechanical stress (high) - Mechanical deformation(high) - Mechanical damage (high) - Short circuit (high) - Overcharging(high) - Incorrect storage (low)	- Overheating - Meltdown of housing - Other structural parts may catch fire - Unwanted chemical reactions - Fire - Explosion - Emission of toxic gases - Strong smoke development

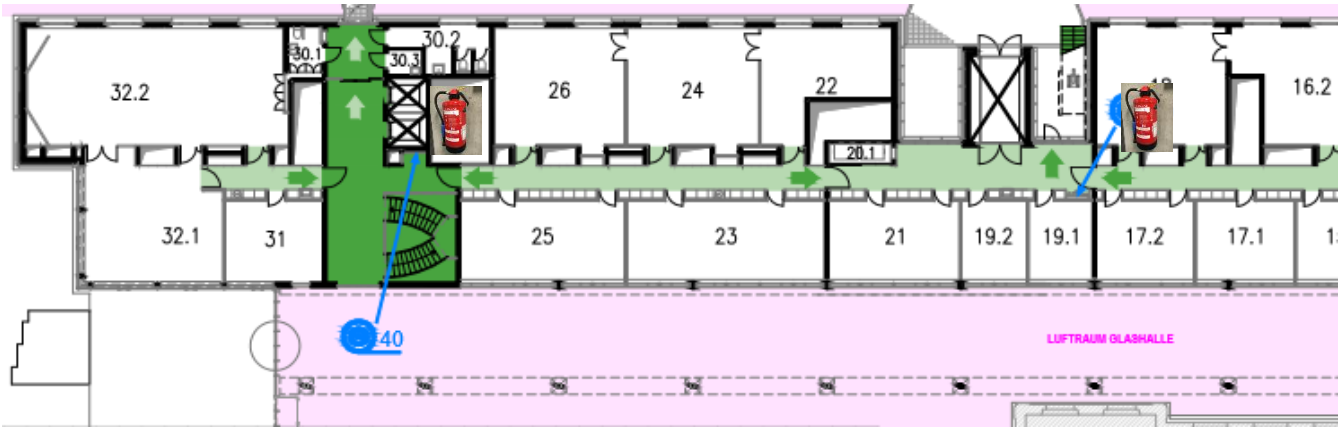
Do's and don'ts when working with batteries

- Comply with the battery manufacturer's specification
- Store unused batteries in fire safe boxes
- Dispose exhausted, defective, deformed or damaged batteries immediately
- Charge batteries with a specification matching charger
- Keep your work desk tidy and avoid having inflammable materials lying around near your electrical installations
- If unattended (e.g. overnight) charge your batteries in a fire safe box

- Never charge batteries without a fire safe enclosing
- Never charge defective, deformed or damaged batteries
- Never charge batteries without an appropriate charging unit
- Never short the terminals of a battery
- Never mechanically treat a battery
- Never puncture the enclosure of a battery
- Do not expose batteries to high temperatures

Tools to fight a fire involving batteries or electronics in general

CLA E floor: 3 x CO2 fire extinguishers distributed in the corridors



What to do in case of overheating or fire of a battery

- Do not touch anything on your research platform (Drone, Robot, e.g.)
- Move quickly away from your research platform (Drone, Robot, e.g.)
- Get one of the fire extinguishers (marked LiPo) to put out the fire
- If cooled down get the platform out of the building or put it into a firesafe box and close it
- Inform the ETH emergency organization (**phone number 888**)

What to do in case of heavy smoke on the floor

- Urge anybody present on the floor to get out of their room and to leave the floor
- Go **downstairs** to the next floor
- In the stairwell press the **red FIRE EMERGENCY Button**
- Wait on the arrival of the firefighter brigade
- Do not open the windows

Important phone numbers

ETH emergency organization	**888**
Firefighter brigade	**118**

First Name ……
Last Name ……

I hereby declare that I have read and understood the meaning of this document*

Supervisor ……

(for students / guests)

Date ……

Signature ……

*With this signature you only declare that you have read the document. It has no legal liability.